DOCUMENT RESUME

ED 092 149 IR 000 710

AUTHOR	Olson, Paul E.; Pletzke, Chester J.
TITLE	Analysis of the Midwest Medical Union Catalog. Progress Report Number One.
INSTITUTION	Midwest Health Science Library Network, Chicago, Ill.
SPONS AGENCY	National Library of Medicine (DHEW), Bethesda, Md.
PUB DATE	May 74
NOTE	36p.
EDRS PRICE	MF-$0.75 HC-$1.85 PLUS POSTAGE
DESCRIPTORS	Book Catalogs; Cataloging; Catalogs; *Comparative Analysis; *Libraries; Medicine; *Research; *Union Catalogs
IDENTIFIERS	CATLINE; *Midwest Medical Union Catalog; National Library of Medicine; National Union Catalog

ABSTRACT

A study was made of the effectiveness of the Midwest Medical Union Catalog (MMUC). The literature on union catalogs characterizes the objectives and procedures of such catalogs, but gives little reliable data about costs and rarely focuses on traffic. The objective of this study is to determine whether the cost of the MMUC is justified by its benefits and whether it does aid the cooperative efforts of the contributing libraries. The hypotheses, which will be tested, seek to compare the MMUC with the National Union Catalog, the National Library of Medicine: Current Catalog, CATLINE, and with the individual catalogs of the contributing libraries. In addition, it will be determined whether there is a relation between size of a contributing library and its ability to satisfy MMUC requests and whether some libraries can satisfy too few requests to be worthwhile. Current status and future goals of the study are reported. (WH)

Analysis of the Midwest Medical Union Catalog

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Midwest Health Science Library Network
ILLINOIS/INDIANA/IOWA/MINNESOTA
NORTH DAKOTA/WISCONSIN

Acknowledgments

Four student assistants have been especially helpful in standardizing the union catalog maintenance procedures, in gathering of data, and reduction of data. They are: Peter Brazionis, Anil Rajadhyaksha, Alan Vognar, and Sandra Zimny. Thanks also to the staff of the John Crerar Library, especially those in the cataloging and interlibrary loan departments, for their willing cooperation. And finally, a special thanks to the libraries contributing to the union catalog for their continued quiet, and often unrecognized, support of the catalog and for their cooperation in this study.

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OBJECTIVE OF THE STUDY:

At a time when more and more librarians and library administrators are seeking cooperative efforts, networks, or consortia as means of increasing service to the patron, it is important to evaluate the traditional tools of cooperative ventures and to determine the extent to which they aid in the cooperative effort. Union catalogs have long been held to be the first required step necessary for cooperative efforts. This study attempts to determine whether or not a regional union catalog of health science monographs does in fact measurably aid such efforts. The study attempts to determine whether or not the benefits derived from that catalog justify the costs of maintaining it. The catalog studied is an existing catalog and the costs and benefits examined are current ones. The analysis is unique in that a union catalog is thoroughly examined primarily in context of traffic against that catalog rather than as an isolated phenomenon which is its own reason for being. Finally, the study contains implications for selection of alternative methods and formats of bibliographic control.

HISTORY AND DESCRIPTION OF THE MIDWEST MEDICAL UNION CATALOG:

The Midwest Medical Union Catalog (MMUC) is a main-entry card catalog reflecting the monographic holdings of health science libraries in the six states in the Midwest Health Science Library Network (Illinois, Indiana, Iowa, Minnesota, North Dakota and Wisconsin). The catalog is in two parts: Part One was started in 1926 and shows the health-science holdings of seven Chicago-area libraries.* This catalog contained 161,000 cards in 1969 when additions to it ceased.

Concurrent with the closing of the first part of the Union Catalog and with the beginning of the Midwest Regional Medical Library (now called the Midwest Health Science Library Network) was the beginning of Part Two of the Midwest Medical Union Catalog. Collection of cards began in 1969 with 27 libraries from throughout the region contributing. Currently 43 libraries contribute main entry cards and Part Two of the catalog contains cards for 100,000 titles (a list of the contributing libraries is in Appendix I, with breakdown by type of library in Appendix II).

The Midwest Medical Union Catalog has been and is being used only to locate materials for interlibrary loan. Interlibrary loan requests for monographs are forwarded to the John Crerar Library and, if not located in that library, are searched in MMUC and, if found, are referred to the holding library.

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*The John Crerar Library, Northwestern University Medical School Library, University of Chicago Biomedical Libraries, Chicago Medical School Library, University of Illinois at the Medical Center's Library of the Health Sciences, Loyola University Medical and Dental School Libraries and Rush Medical College Library.

HYPOTHESES:

The hypotheses below are relational in that they attempt to measure the value or cost of a method of doing something in relationship to another method of doing the same thing. The hypotheses are all written in the context of the traffic against the union catalog (interlibrary loan requests). Where the implications of the various hypotheses are not clear, explanations follow.

1. A greater number of interlibrary loan requests for monographs can be located in the Midwest Medical Union Catalog (MMUC) than in the National Union Catalog (NUC). (The Midwest Medical Union Catalog, unless otherwise indicated, includes both parts of the catalog -- Part One, begun in 1926 and Part Two, begun in 1968. A request is one sent to the John Crerar Library, searched in the Crerar catalog, but not found there. The National Union Catalog is the printed edition of the National Union Catalog, including the Pre-1956 Imprints volumes which have been published.)

2. Of the requests located in NUC, more than 50% either have no location given or are located outside the geographic area included in the Midwest Health Science Library Network.

3. A greater number of titles requested can be located in MMUC than can be located by arbitrarily sending the request to a probable holding library without checking any union catalog.

4. It costs less to search MMUC for titles requested than to search NUC.

5. It costs less to maintain MMUC than to maintian NUC. (Maintenance of MMUC includes both the maintenance costs at the location of the catalog and the costs to the contributing libraries.)

6. In the case of a request located in MMUC and referred to another library in the region, of the total time, from origination of a request to receipt of the monograph or the status report indicating nonavailability of the monograph, over 20% of that time is spent transmitting the request to MMUC, processing it there, and sending it to a holding library.

7. Of the requests located in MMUC, the percentage of items which could not be located in the National Library of Medicine; Current Catalog or CATLINE is greater than 30%.

8. The percentage of titles requested and located in MMUC which are held by only one library is greater than 30%.

9. Of the above titles in MMUC held by only one library, the percentage which cannot be located in Current Catalog or on CATLINE is greater than 30%.

10. There is a positive linear correlation between size (in bound volumes) of contributing library and ability to satisfy requests referred to the Midwest Medical Union Catalog. (A positive linear correlation indicates that the ability to satisfy requests increases with an increase in the size of the contributing library. This hypothesis has implications for the problem of which libraries should be included in any union catalog. It tests the assumption stated by Merritt that only the 10-15 largest libraries in an area should be included in a regional catalog -- see page 12 of this report.)

11. There are libraries contributing to the Midwest Medical Union Catalog whose collections can satisfy less than 1% of the interlibary loan requests referred to the catalog. (This hypothesis is designed to determine if there are current maintenance costs for which there are minimal benefits.)

LITERATURE SEARCH

In reviewing the literature on union catalogs, one should remember that much of this literature was written before modern communications technology decreased the burden of physical separation between libraries and before computer technology made it easier to consider union catalogs as byproducts of shared cataloging and processing rather than end products in and of themselves.

The reviewed literature on union catalogs can be organized into historical information, statements of objectives, procedural guides, studies of specific catalogs, studies of the Midwest Medical Union Catalog, and current trends.

History

The most complete review of the history of union catalogs is by Brummel. He starts with the first modern union catalog, begun in 1895 at the Prussian State Library, and works up through the 1930's and the heyday of union catalogs in the United States (pp. 18-20).

One relevant controversy present throughout the history of union catalogs is whether or not there should be a series of regional union catalogs or one centralized union catalog. Great Britain opted for a combination of central and

regional catalogs. Regional catalogs received much attention in the United States in the 1930's because of the availability of Works Projects Administration labor, and a frequently-heard argument was that the vast size of the United States made regional catalogs necessary. Brummel indicates that an advantage of regional catalogs is that they facilitate personal contact between the director of the catalog and the participating librarians. However, regional catalogs produce a situation where a library may be duplicating efforts by contributing to a number of union catalogs. Buckland, studying the situation in England, argues that the "cost of editing the multiplicity of union catalogues must be significantly higher than it would be for a single union catalogue for the same number of locations." (Buckland, p. 22)

Objectives

Perhaps the aspect of union catalogs receiving the most attention in the literature has been the problem of what the union catalog should do -- what its objectives are. Opinion ranges from the position that the union catalog should be only a finding tool for the purpose of interlibrary loan (Brummel, p. 32; Van der Wolk, p. 378) to the opposite position that the union catalog should assume a number of other tasks and become the vehicle for interlibrary cooperation.

Brummel, reflecting the first position, wrote that

> As regards smaller catalogues such as the regional union catalogues in the United States, the inclination to justify their existence by shouldering many and varying tasks will have to be curbed, so that they may better fulfill the primary and principal task of a union catalogue -- which is simply the locating of any publication demanded. (Brummel, p. 32)

Reflecting the other position is Downs, who wrote that

> The union catalog is one of the most spectacular forms of library cooperation. It appears to solve many perplexing problems facing libraries in the past. Its practical aid in the acquisition, control and mobility of books accounts for the amazing growth in the last decade of the union catalog movement. Few would contend that bibliographical centers and union catalogs will, unaided, create a library millennium. Nevertheless, the potentialities of the scheme are immense. (Downs, p.. xxii)

In terms of how they view the functions of the union catalog, most writers express opinions between the extremes of Brummel and Downs. In addition to the objective of serving as a locating device, the following are proposed as objectives of a union catalog:

-- Coordination of acquisitions (Brummel, pp. 32-34; Kuncaitis, p. 10; Downs, p. xxii; Willemin, p. 4; Stone, p. 221)

-- Provision of bibliographical information (Brummel, pp. 32-34; Kuncaitis, p. 10; Willemin, p. 4; Stone, p. 220)

-- Conservation in a region of last copy of a title (Brummel, pp. 32-34; Kuncaitis, p. 10; Bruno, pp. 342-45)

-- Determination of subject responsibility of libraries (Kuncaitis, p. 10)

-- Compilation of bibliographies (Kuncaitis, p. 10)

-- Listing of unlocated books (Bruno, pp. 342-45)

-- Unification and standardization of catalogs (Willemin, p. 4)

-- Avoidance of duplicate purchase of expensive items (Brummel, pp. 32-34; Kuncaitis, p. 10; Stone, p. 22)

-- Provision of information for cataloging (Stone, p. 220)

Procedures

In addition to the extensive coverage of the objectives of union catalogs, there is also extensive coverage of the procedures required to create and maintain a union catalog. Merritt, Brummel, Willemin and Berthold discuss the down-to-earth, nuts-and-bolts problems of creating and maintaining a union catalog.

Studies of Specific Catalogs

While there are many discussions of objectives and procedures, there are few quantitative studies with more than specific applications. The usual type of quantitative information released about union catalogs is the number of: titles, cards added each year, contributing libraries, unique titles, discarded cards, and requests for information. In 1939, Tauber wrote that "... little or nothing has been

written about the use of union catalogs. What does the contributing library put into the union catalog and what does it get out of it?" (Tauber, p. 415) And 32 years later, Casey repeated the complaint when he wrote:

> The plight of the regional bibliographical centers underscores the need for definitive answers to many questions in network design: How does the high cost of multiple locations in union catalogs balance against the cost of subsidizing a few major resource libraries? How does the cost in time and money for querying a bibliographical center balance against the "hit-or-miss" approach in interlibrary loan? How does the cost/benefit ratio of catalogs of subject strength compare to the cost/benefit ratio of the vastly more costly union catalog? (Casey, p. 50)

There are a few studies of interest. Tauber studied the cost to a contributing library (Temple University) of contributing cards to a union catalog. However, card reproduction methods have become more sophisticated since that time and wages for typists have also gone up slightly from the $.45 per hour he reported in 1939. (Tauber, p. 419)

Buckland created a mathematical model to show that multiple union catalogs were more expensive to maintain than a centralized union catalog, but he did not gather any data to support the structure of the model.

Brown studied the effects of the Union Library Catalog of the Philadelphia Metropolitan Area on interlibrary loans and found that the number of requests sent to the Library of Congress decreased by 10 per cent after the introduction of the Union Catalog.

Stone examined the Bibliographical Center for Research at Denver, the Cleveland Regional Union Catalog, the Ohio Union Catalog, the Union Library Catalog of the Philadelphia Metropolitan area, and the Nebraska Union Catalog. He found that 85% of the service was of a locational type and that, of the titles searched, 20% could be located in only one library. (Stone, p. 218) 25% of the materials requested had been published in the previous five years. (Stone, p. 223) A comparison of the Denver Catalog and the Library of Congress Union Catalog was made, and Stone found that of 1,339 items checked

> ... although the Library of Congress Union Catalog located a larger per cent of the titles than were located through the union catalog at Denver (90.81 per cent as compared with 77 per cent), the Bibliographical Center located a still larger number 95.59 per cent, with the aid of all tools and means at its disposal.
>
> The National Union Catalog also failed to show locations in libraries in the Rocky Mountain region for any of the items checked, although 757 of the 1,339 were found there by the Center. (Stone, p. 223)

While most of Merritt's discussion on costs gives unit costs rather than the more useful unit times, he does give unit times for combining, stamping and filing cards. Combining is the process of grouping together cards of the same title but from different libraries. Stamping is the process of stamping location symbols on one card and discarding the duplicates. Merritt quotes Campion as reporting a combining unit time of 250 cards per hour and a stamping time of 1,000 cards per hour. Merritt states that the combined process of

combining and stamping was done with the Cleveland catalog at the rate of 93 cards per hour. (Merritt, pp. 38-39) So there is a good deal of variance in reported times. Merritt gives filing rates for six catalogs and the average filing rate for clerical (but not supervisory) personnel was 53 cards per hour. (Merritt, p.49)

In his analysis of the overlap of titles, Merritt found that the percentage of unique titles in six union catalogs was 75 per cent. (Merritt, p. 92) He suggests that, because of duplication patterns, the 10 or 15 largest libraries be included as contributors to a catalog, but that, after that, little is gained in terms of unique titles by adding other libraries. (Merritt, p. 92)

Kuncaitis and Goldwyn studied the Cleveland and Columbus catalogs and found that while these catalogs provide a contribution to library service in the region, the costs of the catalogs did not justify their separate existences and they recommended that the catalogs be unified. (pp. 8-9) Kuncaitis and Goldwyn also provide one of the few estimates of the cost to the contributors of the catalogs, but the authors do not give unit costs and they can conclude only that "...the cost is actually negligible for the smaller contributors, but amounts to hundreds of dollars for the larger ones." (Figure 27, note)

Studies of The Midwest Medical Union Catalog

Two studies have been done of the Midwest Medical Union Catalog. The first was done by the Central Office staff of the Midwest Health Science Library Network in 1970 to support further funding from NLM for the Union Catalog. This study reported that 44.6 per cent of requested monographs were from the period 1965-1970. (The Midwest Medical Union Catalog, p. 6)

The study also found that ". . . the ratio 76.7 per cent of titles located in only one library by the Midwest Medical Union Catalog [Part Two of the catalog only] compiled over a period of only 10 months by 34 libraries with quite varied clientele, emphatically warrants its continued maintenance." (The Midwest Medical Union Catalog, p. 5)

In the second study, finished in 1971, as a master's thesis at the University of Chicago, Hill took a sample of 100 requests for monographs and compared results when the Midwest Medical Union Catalog (Part One and Part Two) was used and not used in searching.

Hill's study indicates that searching was only slightly more successful when using the Midwest Medical Union Catalog (called RUC by Hill):

> . . . not only a larger number of items were successfully located in the region at the second stage of the search when RUC was used (17 as compared to 13) but also a larger total percentage of items were located within the region when RUC was used (67 per cent as compared to 60 per cent). In addition, when RUC was used, 64

> per cent of the titles were located at an average cost of only $.38 while the cost of locating only 60 per cent of the titles without RUC was $.51... Although the costs of searching using RUC ultimately exceed, slightly, those not using RUC, the increase in the percentage of regional locations made possible acts as a balancing factor. (Hill, p. 35)

It will be interesting to see if these marginal benefits of the union catalog will have increased now that Part Two of the catalog is nearly five years old.

Current Trends

There is no longer the undaunted enthusiasm for union catalogs that there used to be and they are less often seen as the ultimate in cooperation (although union catalogs and union lists of serials are still often displayed as evidence of cooperation, perhaps because of the difficulty of presenting other tangible evidence of cooperation). Anders writes that,

> Union catalogs, at one time regarded as a means of achieving greater usage of the bibliographical resources of an area and of fostering cooperative agreements among libraries, have in recent years been looked at with some degree of suspicion and disfavor. Critics state that, in view of the use made of them, such catalogs are too expensive and too cumbersome to maintain. (Anders, p. ix)

Perhaps this change in attitude has also, in part, been caused by changing

technology in communications and data processing. The large geographical size of the United States is now a less valid argument for regional catalogs, and computer technology as utilized at OCLC makes it possible to generate union catalog data as a byproduct of shared cataloging. For example, the Union Library Catalogue of Pennsylvania encourages libraries with holdings in its catalog to join the OCLC system and to send to the Catalogue only those foreign language items not included in OCLC and those titles for which the individual library will input the original cataloging.

In summary, then, the literature on union catalogs can be characterized as having much information about the objectives of union catalogs and about the procedures to be used in creating and maintaining union catalogs, a few generally applicable studies with quantitative information, much information relevant to particular catalogs only, and several studies of the Midwest Medical Union Catalog. The literature also indicates that little reliable data about costs are available, that union catalogs have only infrequently been studied in the context of the traffic against these catalogs, and that technological developments are forcing changes in our thinking about union catalogs. It is in the context of this historical material and these current trends that the present study is taking place.

METHODOLOGY

1. A GREATER NUMBER OF INTERLIBRARY LOAN REQUESTS FOR MONOGRAPHS CAN BE LOCATED IN THE MIDWEST MEDICAL UNION CATALOG (MMUC) THAN IN THE NATIONAL UNION CATALOG (NUC).

H_o : $p_{uc} = p_{nuc}$

H_a : $p_{mmuc} > p_{nuc}$

where H_o is the null hypothesis to be rejected at 95% confidence in order to accept H_a, the research hypothesis. p_{mmuc} is the probability of locating a request in MMUC and p_{nuc} is the probability of locating a request in NUC.

Two random samples will be selected from the interlibrary requests for monographs searched in MMUC from December, 1973 through July, 1974. One sample of requests will be searched in MMUC and the other in NUC.

Only requests with adequate verification are included in the study. Verification not considered adequate includes verification in publishers' catalogs, correspondence, or word-of-mouth.

Pre-1956 imprints in the alphabetical range from Ko--Z are not included in the tabulation for this hypothesis.

2. OF THE REQUESTS LOCATED IN NUC, MORE THAN 50% EITHER HAVE NO LOCATION GIVEN OR ARE LOCATED OUTSIDE THE GEOGRAPHIC AREA INCLUDED IN THE MIDWEST HEALTH SCIENCE LIBRARY NETWORK.

H_o: $p_{-loc} = .50$

H_a: $p_{-loc} > .50$

where p_{-loc} is the probability that a request located in NUC has no location given in the geographic area included in the Midwest Health Science Library Network. A random sample of the request located in NUC will be searched to determine the probability of a holding library being located inside the network area.

3. A GREATER NUMBER OF TITLES REQUESTED CAN BE LOCATED IN MMUC THAN CAN BE LOCATED BY ARBITRATILY SENDING THE REQUEST TO A PROBABLE HOLDING LIBRARY WITHOUT CHECKING ANY UNION CATALOG.

H_o: $p_{mmuc} = p_{arb}$

H_o: $p_{mmuc} > p_{arb}$

Two random samples will be selected of the requests for monographs sent to MMUC for searching. For one sample group, a clerical person, having studied profiles of the holdings of the libraries in the region, will choose an appropriate library for each request. Lists of the requests will then be sent to the appropriate libraries for searching in their catalogs to determine the number of items which can be located successfully. Then

the success rate for this method will be compared with the success rate using MMUC.

The second sample group will be used to test another method of selecting the appropriate library. Based on the data collected for Hypothesis # 10, a list of contributing libraries and the probability of their being able, generally, to fill requests will be generated. Then requests will be assigned to the various libraries based on a formula taking into account the probability of their being able to fill requests generally and their geographical proximity to the requestor. Then the success rate for this sample will be compared with the success rate for the sample using MMUC.

4. IT COSTS LESS TO SEARCH MMUC FOR TITLES REQUESTED THAN TO SEARCH NUC.

H_o $u_{mmuc} = u_{nuc}$

H_a: $u_{mmuc} < u_{nuc}$

where u_{mmuc} is the arithmetic mean of the time required to search MMUC and u_{nuc} is the arithmetic mean of the time required to search NUC to find a location for a request. In this hypothesis, cost is measured in unit times because the only costs for searching both tools are costs for the manual operation of searching.

5. IT COSTS LESS TO MAINTAIN MMUC THAN TO MAINTAIN NUC.

H_0 : $u_{mmuc} = u_{nuc}$

H_a : $u_{mmuc} < u_{nuc}$

where u_{mmuc} is the average cost of maintaining MMUC and u_{nuc} is the average cost of maintaining NUC.

In this case, cost will be represented in dollars and cents. The cost of MMUC will include the costs of labor, both direct and indirect, to reproduce the catalog cards, sort them, and ship them from the contributing library, the cost of receiving the cards, editing them, combining them, and filing them in MMUC, the cost of supplies, and the cost of storage space. The cost of these things at the Midwest Health Science Library Network will be determined by a cost analysis there. The cost to the contributing libraries will be requested from those libraries, or, if this information is not available to them, will be obtained by visiting a sample of these libraries, at their invitation, to determine their costs. The cost of the storage and maintenance of NUC will be determined by doing a cost study at the John Crerar Library.

6. IN THE CASE OF A REQUEST LOCATED IN MMUC AND REFERRED TO ANOTHER LIBRARY IN THE REGION, OF THE TOTAL TIME, FROM ORIGINATION OF A REQUEST TO RECEIPT OF THE MONOGRAPH OR THE STATUS REPORT INDICATING NONAVAILABILITY OF THE BOOK, OVER 20% OF THAT TIME

IS SPENT TRANSMITTING THE REQUEST TO THE MMUC, PROCESSING IT THERE, AND SENDING IT TO A HOLDING LIBRARY.

H_o: $5u_{mmuc} = u_{tot}$

H_a: $5u_{mmuc} > u_{tot}$

where u_{mmuc} is the average time spent processing a request at MMUC and u_{tot} is the total amount of time, from the origination of the request to the receipt of the monograph or status report. In order to test this hypothesis, the following dates are needed: 1) the date on which the request was first sent to the John Crerar Library, 2) the date on which the request was received by Crerar, 3) the date on which the request was referred to another library by Crerar, 4) the date on which the referral was received by that other library, and 5) the date on which either the monograph was received or the ILL request was returned unfilled. Date 1 can be obtained from the ILL forms. Date 2 is stamped on the ILL forms by Crerar personnel. Date 3 will be obtained by noting it at Crerar. Date 4 will be obtained by sending a card along with the ILL request to the library to which the request is referred. The card will ask that that library indicate the date the request is received, and send the card back to the investigator. Date 5 will be obtained by sending a card along with the ILL form to the requesting library asking that that library keep the card until the monograph or status report has been received and then send with card back with the date and the result of the processing.

7. OF THE REQUESTS LOCATED IN MMUC, THE PERCENTAGE OF ITEMS WHICH COULD NOT BE LOCATED IN THE NATIONAL LIBRARY OF MEDICINE; CURRENT CATALOG OR ON CATLINE IS GREATER THAN 30%.

$H_o : p_{-cc} = .30$

$H_a : p_{-cc} > .30$

where p_{-cc} is the probability of not locating the item in Current Catalog or on CATLINE. This hypothesis and hypothesis # 9 are designed to test the adequacy of MMUC as a data base in the context of the requests against it and in relationship to another data base, Current Catalog. A sample of the requests located in MMUC are searched in Current Catalog to determine whether or not they are held at NLM. In the case of very new materials, these are searched on CATLINE.

8. THE PERCENTAGE OF TITLES REQUESTED AND LOCATED IN MMUC WHICH ARE HELD BY ONLY ONE LIBRARY IS GREATER THAN 30%.

$H_o : p_{\text{one lib}} = .30$

$H_a : p_{\text{one lib}} > .30$

where $p_{\text{one lib}}$ is the probability of an item being held by only one library. A sample of the requests located in MMUC are searched to determine how many are held by only one library.

9. OF THE ABOVE TITLES HELD BY ONLY ONE LIBRARY, THE PERCENTAGE WHICH COULD NOT BE LOCATED IN CURRENT CATALOG OR ON CATLINE IS GREATER THAN 30%.

$H_o : p_{-cc} = .30$

$H_a : p_{-cc} > .30$

where p_{-cc} is the probability that an item which is unique in MMUC will not be located in Current Catalog.

10. THERE IS A POSITIVE LINEAR CORRELATION BETWEEN SIZE (IN BOUND VOLUMES) OF CONTRIBUTING LIBRARY AND THE ABILITY TO SATISFY REQUESTS REFERRED TO THE MIDWEST MEDICAL UNION CATALOG.

$H_o : \rho = 0$

$H_a : \rho > 0$

where ρ is the Pearson Correlation Coefficient comparing size and probability of being able to fill a request.

Requests searched against the Union Catalog will be tabulated to determine which libraries could have filled the request. In this case, only Part Two of MMUC will be used because this is the only part of the catalog in which all 43 libraries are represented. Once the requests have been tabulated by library, then library size in bound volumes will be obtained from either the 1971 Directory of Health and Allied Science Libraries and Information Sources for the Midwest Regional Medical Library, or the 1973 Directory

of Health Science Libraries. Then the Pearson Correlation Coefficient will be used to determine whether or not a positive linear correlation exists between library size and ability to answer requests.

11. THERE ARE LIBRARIES CONTRIBUTING TO THE MIDWEST MEDICAL UNION CATALOG WHOSE COLLECTIONS CAN SATISFY LESS THAN 1% OF THE INTERLIBRARY LOAN REQUESTS REFERRED TO THE MIDWEST MEDICAL UNION CATALOG.

H_o: $p_{lib} = .01$

H_a: $p_{lib} < .01$

where p_{lib} is the probability of a library being able to fill a request as determined by searching MMUC.

Again, only Part Two of the MMUC will be used. From the tabulation of requests by library in the above hypothesis, the number of requests that a library can fill is divided by the total number of requests and then this figure (p_{lib}) is checked for each library to see if it is significantly less than .01.

CURRENT STATUS OF THE STUDY

A chart in Appendix III shows the schedule for the Union Catalog study. The following have been accomplished at this time: The filing of the two-year backlog of 70,000 cards was completed 8 February 1974 and the procedures for maintaining the catalog were standardized. The object of the study was identified: it was necessary to identify the characteristics of the catalog, to define its scope, to identify the contributing libraries, and to answer the question: "What is the Midwest Medical Union Catalog?" There was no clear definition of the catalog, especially since maintenance had ceased in 1970, and this information was gathered from various reports, memoranda, and verbal accounts.

A study of the literature was begun and still continues in order to locate and utilize research done by others on union catalogs and other related topics.

The hypotheses of the original study (written for an NIH grant) were revised in order to remove bias toward the existing catalog, to avoid replicating already completed research, or to bring the hypotheses more in line with the objective of the study. The corresponding methodologies were also rewritten.

Collection of the data began on 1 December 1973 and is in progress at this time. Data collection will continue through September, 1974.

RESEARCH GOALS FOR THE COMING YEAR

The foremost goal is to complete the study as outlined. In addition, other formats for union catalogs, such as microfilm, computer based catalogs, or catalogs which are the byproduct of cooperative cataloging will be investigated. Finally, the obtained results will be interpreted and prepared for dissemination to interested members of the library community.

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Contributing Libraries

Midwest Medical Union Catalog

ILLINOIS

American Dental Association	ICADA
American Hospital Association	ICAH
American Veterinary Medical Association	ICAVS
Children's Memorial Hospital, Chicago	ICChH
Cook County, Illinois Hospital	ICCH
Chicago Medical School	ICCM
Cook County, Illinois School of Nursing	ICCN
Chicago College of Osteopathic Medicine	ICCO
Illinois College of Optometry	ICICO
The John Crerar Library	ICJ
Loyola University of Chicago Medical Center	ICL
Illinois Masonic Medical Center	ICMM
Michael Reese Hospital and Medical Center	ICRH
Rush Presbyterian St. Luke's Medical Center	ICRM
Chicago, University, Bio-Medical	ICU-M
Northwestern University Dental School	IEN-D
Northwestern University Medical School	IEN-M

National College of Chiropractic	ILoC
Illinois, State University at Normal	INS
Illinois, University at Urbana, Biology	IU-B
Illinois. University at the Medical Center	IU-M
Illinois, University at Urbana, Veterinary Medicine	IU-V

INDIANA

Butler University College of Pharmacy	InIB-P
Purdue University, Life Science	InLP-L
Purdue University, Pharmacy	InLP-P
Purdue University, Psychology	InLP-Ps
Purdue University, Veterinary-Medical	InLP-V
University of Notre Dame, Life Sciences	InND
Indiana University, Anatomy-Physiology	InU-A
Indiana University, Biology	InU-B
Indiana University, School of Dentistry	InU-D
Indiana University, School of Medicine	InU-M
Indiana University, Optometry Library	InU-O

IOWA

Iowa State Medical Library	Ia-M
U.S. Dept. of Agriculture, Agricultural Research Service National Animal Disease Laboratory	IaAAR
College of Osteopathic Medicine and Surgery, Des Moines	IaDmS

MINNESOTA

Mayo Clinic	MnRM
Minnesota, University, School of Agriculture	MnU-A
Minnesota, University, Bio-Medical	MnU-[illegible]

NORTH DAKOTA

North Dakota, University, Medical School	NdU-M

WISCONSIN

Medical College of Wisconsin, Medical-Dental	WMM-M
Wisconsin, University, Medical School	WU-M
Wisconsin, University, School of Pharmacy	WU-P

TABLE I

Subject Scope of Libraries

Type	No.
Medical, including various combinations of nursing, dentistry and pharmacy	25
Separate Dental	3
Pharmaceutical	3
Optometry	2
Veterinary or Agricultural	4
Related Sciences -- biology, psychology, etc	6
	43

TABLE II

Parent Institutions of Libraries

Type	No.
Professional Schools or academic libraries	33
National associations	3
State Medical Library	1
Clinics or Hospitals	5
U.S. Government	1
	43

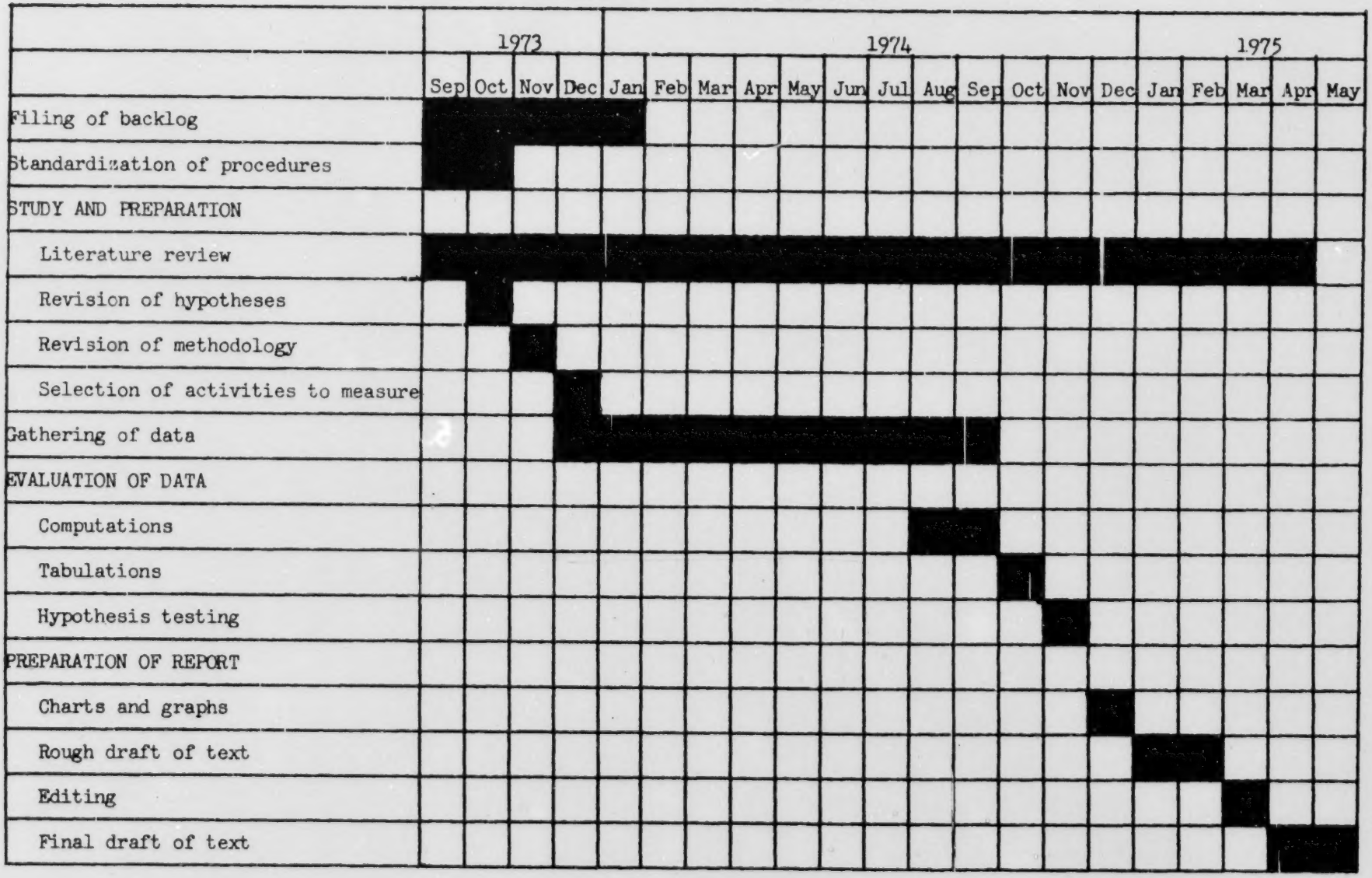
TABLE III

Location

Type	No.
Illinois	22
Indiana	11
Iowa	3
Minnesota	3
North Dakota	1
Wisconsin	3
	43

Appendix II

SCHEDULE FOR UNION CATALOG STUDY



APPENDIX III